IESI 6000

Fast CPU

The IESI 6000 uses the Z80B, the fastest 8 bit microprocessor. This means you get fast execution. Execution is further enhanced with a second microprocessor controlling diskette I/O.

Fast I/O

While processor speed is a factor, in most micro systems I/O is the real determinant of how fast the system will perform for you. **The IESI 6000 really performs.** Look at the comparison table. The speed with which you can read and write records to and from the diskette storage determines how long you sit, waiting for the computer to "get back to you."

Disk I/O Time Comparisons

Name	Write 1000 Records	Copy 1000 Records
IESI 6000	23.9 sec	37.8 sec
Altos 8000-2	74.4 sec	214.2 sec
IBM PC	44.2 sec	265.2 sec
Apple II	268.9 sec	403.9 sec
Televideo TS-802	54.6 sec	206.3 sec

The 6000 writes to diskette **twice as fast** as the IBM PC and copies files **7 times as fast.** The 6000 takes only 7 seconds to "save" a 16K byte WordStar text file and only 5 seconds to load WordStar. Such performance can't be matched.

Full Track Buffering

Using part of the 128K RAM the 6000 buffers a full track of data. When a sector is read or written the entire track containing the sector is read into memory. Subsequent disk I/O performed on a sector within the same track is done in memory. This can mean getting jobs done up to 16 times faster.

We also maintain the directory track in memory. This eliminates the movement of the drive head to the directory track for every read or write.

Ram Disc

In addition to our standard 640K bytes of diskette storage, the IESI 6000 creates an area in the RAM that we call the **RamDisc.** Program overlays and look-up files loaded in this area of RAM appear to CP/M to be on a diskette. However, the access time to get to them gives you an additional four-fold or greater increase in speed over even the IESI 6000 normal diskette read times. In **RamDisc,** saving a 16K byte text file in WordStar takes 1.6 seconds and loading WordStar takes 1.3 seconds.

CP/M 6000— Not Just Faster ... Better

Over the past six years IESI has designed its CP/M I/O drivers to not only enhance speed, but to make the system perform more reliably and be friendlier to the operator.

When most CP/M's encounter a media error, they either do nothing or give you the standard message "BDOS ERROR." Often you don't find out about the problem until you attempt to read the data back.

CP/M 6000 performs a character by character read after write check after each diskette write. If there is a problem, the system retries. If the retries are unsuccessful, CP/M 6000 will identify which of over 50 disk error situations has occurred instead of returning just the cryptic "BDOS ERROR."

CP/M 6000 doesn't just quit, it writes the data on a system track so that it won't be lost. Then it gives the application programmer the ability to trap the error so that the program may be either recovered or terminated in an orderly manner.

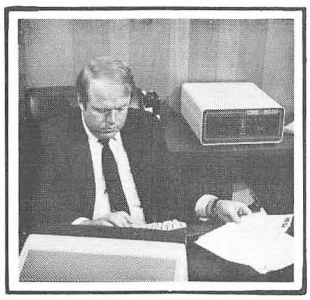
CP/M 6000 isn't just faster, **it's better.**

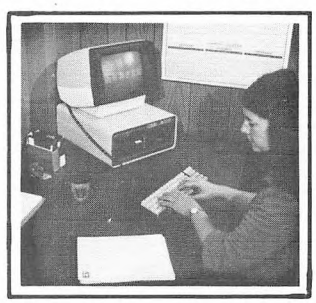
Fast Service

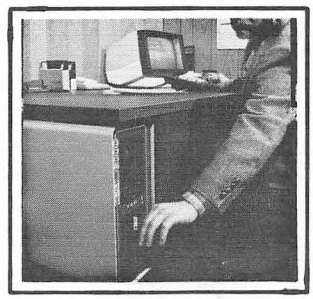
If you rely on your micro in your business or job then you can't afford to have it down for days or weeks. The IESI Express 24 service contract guarantees that you will have a working loaner the next business day. IESI is committed to providing the service support you need to make the 6000 a reliable part of your operation.

FastLine Customer Support

IESI is committed to giving you the best and fastest support you can find in the marketplace. IESI has **FastLine** phone inquiry service that can give you the answers you need, **fast.** At IESI we encourage customers to talk directly to our technical people. We believe this benefits both of us by getting your questions answered quickly.







IESI 6000 Specifications

Main CPU

5.0 MHz Z80B with 128K bytes of "bank switched" main memory, 2K bytes of Prom memory, 4 counter/timer channels and 30 decoded outputs. The RAM memory can be expanded to 1 Mbytes.

Mass Storage

A dedicated second microcomputer controls the diskette drives so as to unburden the main cpu. Each minifloppy drive has 320K bytes of storage for a standard system total of 640K bytes. This may be expanded to 5 Mbytes.

Console Port

The standard console port will accept any asynchronous terminal, automatically responding to speeds from 50 baud to 19.2K baud.

Communications Interface

Terminal side configured ANSI standard 25 pin V.24 connector with RS-232 signals for primary and secondary channels, internal or external clock under software control, SYNC/ASYNC, baud rate, bits per character, parity off/on/even/odd all under software control. Maximum baud rate to 19.2K baud.

External Printer Interface

Centronics standard parallel port for driving Centronics compatible parallel printers. There is an optional serial printer interface available.

Physical

6.7"H x 15.3"W x 17"D. 32 pounds. Aluminum chassis.

Power

115/230 VAC; -15%/+10%; 48-62 Hz; 3-wire grounded; 120 watts.

Environmental

50°F to 105°F; 10% to 90% Relative Humidity, noncondensing.

Service

Service is performed in one of four modes depending on user preference and availability: 1) Return of unit to depot; 2) User replacement of faulty module on site with direction from IESI service personnel; 3) On site maintenance; 4) Express 24 hour service with loaner provided while user's unit is at depot. Contract billing is available. The IESI **FastLine** allows central dispatching for all service and support. Special OEM arrangements are available. Warranty is 90 days from date of shipment and covers parts and labor for factory repair.

Z80 is a trademark of Zilog Corporation
CP/M is a trademark of Digital Research
WordStar is a trademark of Micropro Inc.

The 6000 is manufactured by

IESI
Seattle, Washington

Authorized Dealer

IESI 6000 PRICE SHEET

Item	List Price
IESI 6000 - 128K MEMORY	$3495.00
IESI 6000 - 256K MEMORY	3990.00
20 MEGABYTE HARD DISK	3743.75
640K DISKETTE DRIVE OPTION	525.00
ADDS VIEWPOINT TERMINAL	725.00
WordStar by MicroPro	359.37
MailMerge by MicroPro	181.50
SpellStar by MicroPro	181.50
SuperCalc by Sorcim	208.12
BASIC-80 by Microsoft	252.04
BASCOM by Microsoft	284.35
IESI 6000 BISYNC Communications	225.00
IESI 6000 TTYCOM Communications	225.00
IESI 6000 QUICK Package	335.00

==========

Prices subject to change without notice.

IESI 6000 Microcomputer Software

International Entry Systems Inc. offers a full range of software for use on the IESI 6000 microcomputer. Packages written by IESI take advantage of the IESI 6000's advanced operating system and specific hardware, such as the communications port - features not offered by a standard microcomputer. All of the following software is designed to be adaptable to any standard console device and printer.

Operating System

CP/M 6000

CP/M 6000 is a greatly enhanced version of Digital Research's CP/M. Among the features included in CP/M 6000 that you won't find in a standard CP/M operating system are:

* Directory Track Buffering - By maintaining the directory track in memory, the tedious movement of the drive head to the directory track for every read or write is eliminated, providing for faster disk I/O.

* Full Track Buffering - When a sector of data is read from, or written to, a diskette, the entire track containing the sector is read into memory. Subsequent disk I/O performed on a sector within the same track is done in memory, providing for faster disk I/O.

* RAM-Disc - Provides for disk emulation in RAM memory for lightning-fast "disk" I/O.

* Auto-start - When the system is booted, it will automatically "SUBMIT" the file "SYS.SUB", providing for minimal operator interaction.

* Crash Recovery - If a track cannot be accessed because of media failure, the data is written on the system track for subsequent recovery.

* Detailed Error Messages - CP/M 6000 recognizes over 50 disk error situations instead of returning the standard "BDOS ERROR". Warning messages are also issued if the system is having trouble with disk I/O.

* Write Verification - A character by character read after write is performed after each disk write for ensured reliability.

Included with the operating system are the following utilities:

ASM - Digital Research's 8080 Assembler
BACKUP - Fast diskette backup utility (IESI)
DDT - Digital Research's Debugger
DUMP - File dump utility
ED - Digital Research's character editor

MODEM7 - Asynchronous communications
PAUSE - Batch execution utility (IESI)
PIP - File transfer utility
SQZ/USQZ - File compression/decompression (IESI)
STAT - File size utility
SUBMIT - Batch execution utility
SUBMIT1 - Nested batch execution utility
SYSCPY - System copy utility (IESI)
UTIL - Diskette multi-utility (IESI)
XSUB - Batch execution utility
XSUBOFF - Batch execution utility (IESI)

Data Communications

BISYNC by IESI

BISYNC is a batch communication program designed for environments using the IBM Binary Synchronous Communications (BSC) protocol. BISYNC is a "configurator" meaning users configure their own "flavor" of the protocol by responding to the over 30 availiable options. This process produces a configured communications program which is saved on diskette. Features include multiple file and multiple diskette handling, 2780/3740/3780 capability, extensive help messages, and auto-dial/auto-answer with an internal modem.

TTYCOM by IESI

TTYCOM is an interactive communication program designed for an asychronous, or TTY, environment. TTYCOM is configurable, with over 30 available options including baud rates of 50 to 19,200, space compression, LRC/re-transmit, EBCDIC translation, and alternate baud rate. Included is a burst mode for transmitting and receiving files.

Data Entry

QUICK by IESI

QUICK is a package designed to produce high-speed data entry programs. Built-in functions provide for fast and thorough data verification including checks for maximum and minimum field length, field type (alphabetic, numeric, etc.), check digit verification, and file look-up verification. The programs provide clear, uncoded error messages and prompts. All file handling is transparent to the operator. QUICK has fast and powerful file handling capabilities lending it to many data base management applications. Also featured are full arithmetic routines, and a trace option for program debugging.

Word Processing

WordStar by Micropro

WordStar is a sophisticated, yet simple to use, screen-oriented word processing system. All formatting is done onscreen to show you exactly what will get printed. Extensive use is made of menus and

help messages. It supports printing boldface, double strike, underline, strikeout, subscripts, superscripts, variable character pitch, variable line height, and alternate type style or ribbon color. Other features include background printing, horizontal scrolling, block moves, column moves, and either ragged right or right justified margin.

MailMerge by Micropro

A WordStar option, MailMerge is a powerful multi-purpose file merging program. One of its most popular uses is producing personalized form letters.

SpellStar by Micropro

Another WordStar option, SpellStar is the "proofreader on a disk" - a spelling checker program that quickly finds your spelling and typing errors. SpellStar flags each misspelled word giving three choices: change the word, leave it as it is, or leave it and add it to the 20,000 word SpellStar dictionary.

SuperSort by Micropro

SuperSort combines performance and flexibility in sorting, merging, and selecting information from data files. It can sort and merge up to 32 files into a single file, at the rate of 560 records per minute. And new records can be integreted into a master file in one simple and efficient operation.

WordMaster by Micropro

WordMaster is a screen-oriented text editor designed for programmers.

Spellguard by ISA

Spellguard is a spelling checker similar to SpellStar except that it runs stand-alone.

TEX by Digital Reasearch

TEX prepares documents for printout under CP/M. Features include automatic index and table of contents, pagination, margins, headings, paragraphs and right justification, special features including superscripts and subscripts, bold type and underlining.

SORT-S/SORT-C by Microsoft

Microsoft Sort is a powerful, professional sorting facility with the power to handle all types of sorting requirements rapidly. It can also merge files, select a subset of files, and compare records. Microsoft Sort sequences records by a set of data keys supplied by the programmer. There is no limit on the number or size of keys. Sort-S is the stand-alone version while Sort-C is the COBOL-hosted version availiable through the COBOL SORT/MERGE statement

Accounting

IESI offers a general accounting system that can improve the efficiency and accuracy of your admimistrative financial information handling. It is composed of three subsystems - Accounts Payable and Accounts Receivable, General Ledger, and Payroll with Job Costing. Each subsystem can be used as a stand alone business tool, or the three can be used in combination to provide a total accounting system. Each has an easy-to-use menu selection of tasks to perform and password protection.

Accounts Payable and Accounts Receivable

The Accounts Payable is an invoice-linked system. It features a flexible check collection procedure that allows the calculation of checks in one of two ways. There is a program to print the calculated checks on check forms. Another program prints an open or closed item listing, plus an aging summary for all open items. The Accounts Payable program also maintains vendor activity totals.

The Accounts Receivable system is a low volume invoice system. An invoice can be entered at any time, ranging from before it is ready for billing to after it has been paid. Accounts Receivable also has a provision for progress billing, which keeps track of milestone payments made before the invoice is ready to be billed. One of the programs prints reports which list the invoices which have not been billed, open items, and an aging analysis of open items. Another program prints customer statements. Accounts Receivable can also optionally post directly to several of the accounts in the General Ledger System.

General Ledger

The General Ledger accepts postings to the various accounts from any external application program. Cash journal entries and direct postings can also be entered. Balance sheets and income statements can be formatted and printed for the current month, current quarter, or any of the previous three quarters. There is also a special report that lists the current account balance for selected accounts.

Payroll with Job Costing

The Payroll system handles both hourly and salaried employees. It has the capability of splitting an employee's wage among several job cost accounts. The standard management reports are then produced, giving up-to-date status of various profitability centers.

Management Tools

SuperCalc by Sorcim

SuperCalc is designed to aid in the creation and manipulation of numerical worksheets. Accountants, planners, business owners and engineers all find SuperCalc invaluable for day to day "what if"

questions, as well as "now what?" for those times when the unexpected occurs. By entering a new figure in the appropriate column, SuperCalc automatically calculates the spreadsheet. Since SuperCalc is easy to use, a programmer is not required. It has been designed to use a minimum number of commands to get maximum power. Some of SuperCalc's functions include flexible formatting of report layouts, help command, conditional calculations, non-data field protection, and formulae are always availiable for review.

Multiplan by Microsoft

Multiplan is an electronic worksheet program similar to SuperCalc which features the use of full English words for commands, use of English formulas, 8 display windows, string functions, and special print formatting and alignment options.

Data Base Management

dBase II by Ashton Tate

dBASE II is an interactive relational database management system. It allows you to conditionally display and print data, manipulate data down to single characters, change the entire database structure, and do calculations on fields, records, and entire databases. dBASE II can be used to create, append, move, copy, or otherwise manipulate databases. It has a full, easy to use, English-like language of its own. Altogether, a very powerful tool.

BT-80 by Digital Research

BT-80 is a comprehensive single-user record retrieval system intended for use in PL/I-80 applications where single or multi-keyed access to data records is required. BT-80 can also be used to develop Data Base Management Systems. Using the B-Tree index organization technique, BT-80 keys are maintained in balanced, multi-way tree structures called indexes that offer efficient key insertion, retrieval and deletion characteristics over the broad range of access situations required by a general record retrieval system. Although all access to BT-80 records is made through an index, the details of this interface are transparent to the user.

High-Level Languages

BASIC Interpreter by Microsoft

Microsoft BASIC is the most popular BASIC Interpreter in use today. It is suited for both the beginning and advanced BASIC programmer. Features include four variable types (integer, string, single and double precision), trace facilities, error trapping (ON ERROR GO TO), multi-dimensional arrays, flexible print formatting, extensive program editing, PEEK and POKE statements, and IF/THEN/ELSE and WHILE/WEND.

BASIC Compiler by Microsoft

The Microsoft BASIC Compiler is fully compatible with the Microsoft BASIC Interpreter. The primary benifit of the compiler is increased program execution speed - typically 3 to 10 times faster than the same interpreted program.

COBOL Complier by Microsoft

COBOL is uniquely suited for handling the large volumes of data generated by businesses. The data in COBOL programs is arranged hierarchically and stored in a logical structure with direct connections between related data. Microsoft COBOL has been specially tailored to the microcomputer environment, with provisions for entry of data during program execution, advanced screen formatting capabilities, interactive debugging, and handling of very large programs.

FORTRAN Compiler by Microsoft

Designed specifically for solving numerical problems, FORTRAN has become the most widely used programming language for scientific and engineering applications. Its variable types and complete subroutine library for performing calculations make FORTRAN ideal for applications where computation of complex mathematical formulas and expressions is required.

muLISP by Microsoft

muLISP is Microsoft's implementation of LISP, a high-level, developmental language that is especially useful for symbol manipulation and the processing of symbolic expressions. LISP is noted for its recursive nature and its ability to manipulate arbitrary lists of data.

muMATH/muSIMP by Microsoft

This fully interactive symbolic math system dramatically advances the mathematical capabilities of the microcomputer. With this package you have the tools to perform algebra, trigonometry, calculus, integration, differentiation and transcendental functions. This two-part system consists of muMATH, the symbolic math package, and muSIMP, the general purpose programming language in which muMATH is written.

CBASIC by Digital Research

CBASIC provides precision and an easy-to-use format to give programmers one of the most accurate tools for implementing business applications.

CB-80 by Digital Research

CB-80 is a native code compiler of the CBASIC language. As a direct

enhancement of CBASIC, CB-80 offers all the features of CBASIC plus the speed and versatility of a compiler.

PL/I-80 by Digital Research

PL/I-80 is a standard, structured, commercial applications programming language. PL/I-80 features picture specification, structures, arrays, based and pointer variables, and exception processing.

Assemblers

MS-MACRO by Microsoft

The Microsoft Macro Assembler package is a powerful and flexible assembly language development system designed for Z80 and 8080 assembly language programming. The package includes the relocatable macro assembler, a linking loader, a cross reference facility, and a library manager.

MAC by Digital Research

MAC is upward compatible from Digital Research's standard assembler, ASM. It adds extensive macro processing capability, as well as full expression analysis, conditional assembly and a sorted symbol table for use in debugging. Included is a cross reference facility.

Utilities

DESPOOL by Digital Research

The DESPOOL printing utility allows background disk file printing during the inactive time that CP/M is waiting for console input. Thus, the user can print one file while executing another program.

ZSID by Digital Research

ZSID expands upon the features of the standard CP/M debugger, DDT, utilizing the Z80 instruction set. Features include real-time breakpoints, fully-monitored execution, symbolic disassembly, assembly, and memory display and fill functions.

CP/M, BT-80, CBASIC, CB-80, PL/I-80, MAC, DESPOOL, and ZSID are trademarks of Digital Research. IBM is a trademark of International Business Machines. WordStar, MailMerge, SpellStar, SuperSort, and WordMaster are trademarks of Micropro International Corp. Spellguard is a trademark of Innovative Software Applications. SuperCalc is a trademark of Sorcim Corp. Microsoft, Multiplan, and MS are trademarks of Microsoft Corp. dBASE II is a trademark of Ashton-Tate. muLISP, muMATH, and muSIMP are trademarks of The Soft Warehouse. Z80 is a trademark of Zilog, Inc.

DATACORDER DISK SOFTWARE

With the announcement of the DATACORDER IV and V disk systems, INTERNATIONAL ENTRY SYSTEMS, INC., (IESI) has extended its software support from applications dealing primarily with data entry to those expanded applications only available to powerful microcomputers. In addition to enhanced versions of the proven data entry and communications software, various business applications, word processing, languages, and utility programs are now available.

CP/M QUICK SYSTEM OF PROGRAMS

QUICK is the DATACORDER'S major tool for extensive data checking during high speed data entry. It is an interactive set of programming designed to create sophisticated data capture programs with a minimum amount of programming effort. The power and facility available through QUICK are usually found only in large key-to-disk systems.

One of the powerful features of QUICK is the ability to access standard data files during data entry. Data from reference files can be used to fill in information in the current record being keyed. In addition, a record can be retrieved and updated during the data entry process. The file handling capability greatly increases operator productivity and data integrity.

During the entry process, extensive checks and edits are performed, including those for field length and type, check digits, table lookup and range table. QUICK can also perform calculations on entered data as well as retrieve reference data and automatically place the results into data fields. It can perform calculations across records as well as within records, carrying running totals through the entry process or automatically incrementing a field.

QUICK also has an extensive error correcting capability. An operator can modify any record previously written, including data written in a previous batch. In addition, a four function fixed point calculator mode can be entered at any time.

Successfully using QUICK requires no special programming training or experience. To set up a data entry application, the QUICK programmer keys answers to the program specification questions that appear on the video display. When necessary, the programmer can use the HELP command to answer questions. There is no vocabulary of commands to memorize or any complex syntax to master. Typically, the beginning QUICK programmer can write simple data entry programs after six to eight hours of study.

Using QUICK is an excellent means of moving data capture out of the traditional data enrty department into the hands of the actual users.

THE GENERAL ACCOUNTING SYSTEM

This affordable system can improve the efficiency and accuracy of your administrative financial information handling. The General Accounting System is composed of three subsystems - the Accounts Payable and Accounts Receivable, the General Ledger, and the Payroll with Job Costing. Each subsystem can be used as a stand alone business tool, or the three can be used in combination to provide a total accounting system. Each has an easy-to-use menu selection of tasks to perform and password protection. Descriptions of the three subsystems follow.

ACCOUNTS PAYABLE and ACCOUNTS RECEIVABLE: The Accounts Payable is an invoice-linked system. It features a flexible check collection procedure that allows the calculation of checks in one of two ways. There is a program to print the calculated checks on check forms. Another program prints an open or closed item listing, plus an aging summary for all open items. The Accounts Payable program also maintains vendor activity totals.

The Accounts Receivable System is a low volume invoice system. An invoice can be entered at any time, ranging from before it is ready for billing to after it has been paid. Accounts Receivable also has a provision for progress billing, which keeps track of milestone payments made before the invoice is ready to be billed. One of the programs prints reports which list the invoices which have not been billed, open items, closed items, and an aging analysis of open items. Another program prints customer statements. Accounts Receivable can also optionally post directly to several of the accounts in the General Ledger System.

GENERAL LEDGER: The General Ledger accepts postings to the various accounts from any external application program. Cash journal entries and direct postings can also be entered. Balance sheets and income statements can be formatted, and printed for the current mppnth, current quarter, or any of the previous three quarters. There is also a special report that lists the current account balance for selected accounts.

PAYROLL WITH JOB COST ACCOUNTING: The Payroll System handles both hourly and salaried employees. It has the capability of splitting an employee's wages among several job cost accounts. The standard management reports are then produced, giving up-to-date status of various profitability centers.

SUPERCALC

SUPERCALC is designed to aid in the creation and manipulation of numerical worksheets. Accountants, planners, business owners and engineers all find SUPERCALC invaluable for day to day "what if" questions, as well as "now what" for those times when the unexpected occurs. By entering a new figure in the appropriate column, SUPERCALC automatically calculates the spreadsheet. Since SUPERCALC is easy to use, a programmer is not required. It

has been designed to use a minimum number of commands to get maximum power. Some of SUPERCALC's functions include flexible formatting of report layouts, help command, conditional calculations, formulae always available for review and a command for protecting non-data fields.

SUPERCALC is a product of the Sorcim Corporation.

WORDSTAR

WORDSTAR is proclaimed by many as the finest, most versatile word processing program on the market. With WORDSTAR software, the screen shows exactly what will be printed - including all format variations like page breaks, justification and hyphenation. As soon as a change is typed, it is shown on the screen. To increase its usability, WORDSTAR features also include help messages, powerful editing commands, print enhancements and automatic alignment of decimals in columns of numbers.

MAILMERGE is a WORDSTAR option. MAILMERGE can combine a file containing names and addresses with a file containing letter text, inserting data where variables are specified, even in midparagraph. It enables "personalized" form letters to be created with a specified salutation and/or closing.

SPELLSTAR is another WORDSTAR option. It is a spelling checker program that works with WORDSTAR to find spelling and typing errors entered on the screen. SPELLSTAR flags each misspelled word with a flashing cursor, giving three choices: change the word, leave it as it is, or leave it and add it to the SPELLSTAR dictionary.

WORDSTAR, MAILMERGE and SPELLSTAR are products of the MicroPro Corporation.

DISK BASIC

Microsoft's BASIC interpretive programming language is also available for DATACORDER IV and V users. Long the leader in BASIC for small systems, Microsoft BASIC for CP/M has become the industry standard. In addition to providing more programming flexibility than ever before, MBASIC opens up an entire world of application packages and routines compatible with the DATACORDER IV and V.

CP/M OPERATING SYSTEM

Since the DATACORDER IV and V use the industry standard CP/M Operating System by Digital Research, additional applications programs available in the software market may also be used by the DATACORDER IV and V.

COMMUNICATIONS SOFTWARE FOR DATACORDER IV AND V

Today's fluctuating economy is increasing the importance of having up-to-date information available to management for crucial financial decisions. For businesses with multiple locations, the quality of the central information base is dependent upon gathering the data from remote locations as quickly and as error free as possible. For management in remote locations, financial determination is based upon using updated local information returned from the central site.

Because of this growing necessity for having current operational dat, many companies are deciding to implement telecommunications systems.

Sometimes, however, the justification for having a data communications network can be overshadowed by the cost and hardships associated with implementing it. Trained and experienced telecommunications experts are often needed to program and maintain intricate coding at the central and remote sites. Occasionally, different types of terminals are required at one remote location to utilize different services supplied by the host computer. The time necessary to implement an on-line system can be overwhelming.

With the DATACORDER and its family of proven communications software, the expense of developing and maintaining costly communications programs can be reduced. The steps for initially setting up a communications program with the DATACORDER include 1) loading the communications configurator into the DATACORDER, 2) typing simple responses to a series of questions to tailor the program as necessary and 3) saving the configured program for later use without the need of configuring again.

Different types of communications can be handled by a single DATACORDER. With the flexibility of its display, diskette storage and printer options, the DATACORDER can perform some on-line inquiry during the day, and then operate as an unattended batch data entry terminal at night - both sending data to the host and then receiving data and automatically printing updated reports. The DATACORDER can also be centrally located, gathering and sending data directly to a network of DATACORDERS located in remote sites. The versatility of IESI's communications software allows change in the communications network without painful redesign.

The following is a brief description of different communications packages that IESI offers.

CP/M BISYNC

CP/M BISYNC is a batch communications program designed for environments using IBM's Binary Synchronous Communications protocol. Its primary purpose is to transmit CP/M text files to

a host computer for data processing. Data may also be received by BISYNC for subsequent use by other DATACORDER and CP/M programs.

Since BISYNC is a configurable program, it is originally tailored to a system's requirements by answering a series of questions asked by the configurator. To further simplify the initial setup procedures, any configuration question may be answered by entering a question mark (?). BISYNC will print out a short description of the parameter and the type of input required.

Once configured, all the operator needs to do to initiate data communications is run the configured program, establish the communications link and select a transmit/receive option.

Up to ten filenames may be configured for BISYNC to transmit. If no filename is specified at communications startup time, filenames will be read from the list. BISYNCwill transmit them in the order listed, effectively appending them as they are transmitted. If a filename is specified by the operator at transmission time, the configured list is ignored.

Several different choices are also available for output files. First, BISYNC can append received data to a file if the file already exists at the start of reception. Secondly, BISYNC can automatically delete an existing file if it attempts to write a file of the same name on the same diskette. Finally, in lieu of deleting or appendingto existing files, a list of alternate filenames may be specified.

If at reception time the output file already exists, BISYNC will search this list for the first file that does not exist. Data received is then writen to that file. This facility allows the retention of data at the receiving site from several different transmissions, without the overhead of changing filenames at the tranamission and receiving stations.

Current status is constantly visible as communications occur. Upon termination, transmission results are printed. Blocks received or transmitted, number of retries, as well as any abnormal termination messages are included.

BISYNC is able to transmit to IBM installations running JES2, JES3 and HASP operating systems. In addition, BISYNC has the following capabilities:

- o Unattended Transmit and Receive
- o 150 to 4800 baud rates
- o Half or Full Duplex lines
- o Compatiblity with 2780, 3780, 3741 and others
- o Multiple diskette trnsmission and reception
- o Conversational mode
- o Primary or Secondary Station
- o Terminal ID
- o Internal or External Clocking

- o Auto-dial and Auto-answer
- o Data transparancy
- o Ability to transmit executable programs
- o Component selection (data can be automatically routed to the internal printer)
- o EBCDIC or ASCII Data Link
- o Three types of transmission checking
- o ASCII or EBCDIC data conversion
- o Space compression in transmitted and/or received data

TTYCM4

TTYCM4 is a configurable interactive communications program, emulating most CRT's and teletype style devices. Although TTYCM4 allows on-line interactive communications to most host computers or time share systems, its primary purpose is is the transmission of diskette data files to a host mainframe for processing. It also has the ability to receice data and capture that data on diskette and/or print the data on the internal or external printer.

TTYCM4 follows the same easy setup and operation as discussed above in the BISYNC description.

Some of TTYCM4's options include:

- o 50 to 19,200 baud transmission rates
- o Half or Full Duplex line types
- o Alternate baud rate
- o Transmitted and Received data shown on display and/or printed
- o Character size (number of bits, parity, stop bits)
- o Definable transmission delays for slow host systems
- o Ability to drive up to two external printers
- o EBCDIC and ASCII data conversion
- o Receive space compression
- o Defined codes for transmission/retransmission
- o LRC data checking

IESI 6000

COMBINE MICROCOMPUTING WITH RJE PROCESSING

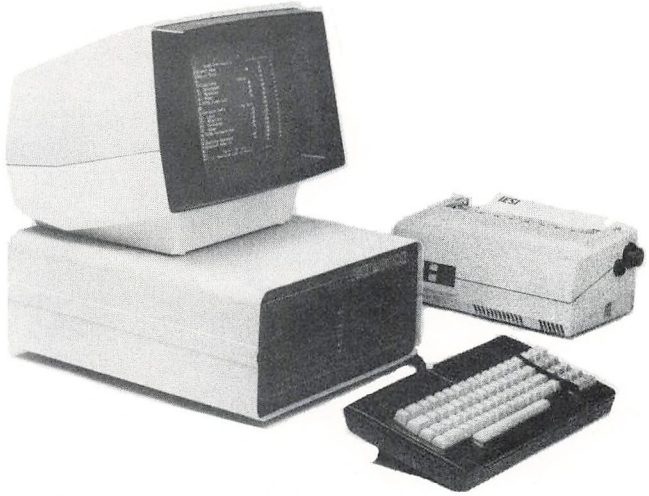
The IESI 6000 Really Performs. Compared with other personal computers on the market, your customers will be up to 10 times as productive, because the 6000 is up to 10 times faster. Your users will spend more time working and less time waiting for the computer to respond. Program loading is fast: 5 sec. to load Wordstar, for example. You get performance you can see and demonstrate.

TIME COMPARISONS

PRODUCT NAME	COPY 1000 RECORDS
IESI 6000	37.8 SEC
IESI 6000 with RAM DISK	19.5 SEC
IBM PC®	265.2 SEC
APPLE II®	403.9 SEC
ALTOS 8000-2	214.2 SEC
TELEVIDEO TS-802	206.3 SEC

The IESI 6000 Works With Your System. Transfer files between the 6000 and your mainframe, or between the 6000 and other personal computers or terminals. IESI provides communication configurators to make IBM 2780/3780 and TTY emulation easy and quick. The 6000 can turn your on-line terminals into powerful personal workstations by simply putting the 6000 between the terminal and its modem. IESI can supply you with complete systems or any of the components.

Personal Productivity Software, Like Wordstar and Supercalc gives your customer more reason to buy. Easy to use data entry and communications software makes you more money by making your batch or on-line processing easier and more cost effective to use.



IESI Support And Reliabilty can get your data entry system installed quickly, and keep it running even for very remote customers. IESI has over 2000 devices installed with remote batch users. We understand the problems of such installations.

The data entry people. IESI

SPECIFICATIONS

Central Processor:
5.0 MHz Z80B microprocessor, with 4 counter/timer channels and 30 decoded outputs.

Memory:
2K bytes of PROM memory for device startup. PROM contains memory test program that tests RAM memory every time the device is powered on. 128K bytes of "bankswitched" RAM memory is standard, and can be expanded to 1 Megabyte. CP/M operating system uses only 4K of 64K program area, so 60K bytes of RAM memory are available for user programs. 32K bytes are used for expanded diskette read/write buffers. RAM memory above 96K bytes available for RAM disc, which is electronic file storage. RAM disc makes program load and file search operate at least twice as fast as normal diskette access.

Mass Storage:
Two mini-floppy diskette drives are standard. Each drive supports 320K bytes of usable storage, using dual sided, dual density, 48 TPI recording. System storage can be upgraded from 640K bytes to 1.28 million bytes using 96 TPI drives, or to 20 million bytes with the substitution of a Winchester fixed disk for one of the floppy drives. A dedicated second microcomputer controls access to and from the storage devices to unburden the central processor. The diskette control program automatically tests the control circuits every time the device is powered on.

Console Port:
The standard console port will accept any asynchronous terminal as the console device, including printing terminals, video display terminals or other microcomputers. The console port responds automatically to speeds from 50 baud to 19.2K baud.

Communications Interface:
The 6000 comes standard with an RS-232 interface for use in communications. The interface includes all signals, including all primary and secondary channel signals, data clock, modem and terminal ready, request and clear to send and signal ground. Maximum baud rate is 19.2K baud. The 6000 can recover synchronous data clock from received data so that asynchronous modems can be used for synchronous communications. All features of the communications are under software control.

External Printer Interface:
The 6000 includes a Centronics-style parallel port for driving Centronics compatible parallel printers. The parallel port is standard. Printers with serial interfaces can be attached to the communications interface, or the system can be supplied with an additional optional serial printer interface.

CP/M 6000, Release 2.2:
CP/M Version 2.2 operating system provides a user program area of 60K bytes. IESI enhanced BIOS provide extra error control to ensure integrity of data recorded on or read from diskette media. This gives the system programmer the ability to trap errors so that application programs can recover gracefully from media failure. CP/M 6000 allows the communication port to be used as the console input device, allowing system support personnel to maintain remote systems via telephone communications.

Physical:
Size: 6.7" H x 15.3"W x 17"D
Weight: 32 pounds
Material: Aluminum chassis
Power: 115/VAC (+10%, −15%); 50/60 Hz (+/−2%); three wire grounded.

Environmental:
Operating: 50°F to 105°F ambient; 10% to 90% relative humidity (non-condensing)
Storage: 0°F to 140°F ambient; 10% to 95% relative humidity (non-condensing)

Optional Items:
CRT console with keyboard (see IESI price list)
Dot-matrix serial printers (see IESI price list)
Letter-quality printers (see IESI price list)
Modems (see IESI price list)
Additional RS-232 interfaces

Service:
Service is performed in one of four modes depending on user preference and availability: 1) Return of unit to depot; 2) User replacement of faulty module on site with direction from IESI service personnel; 3) On-site maintenance; 4) Express 24 hour loaner provided while user's unit is at repair depot. Contract billing is available. The IESI Fastline allows central dispatching for all service and support. Special OEM arrangements are available. Warranty is 90 days from date of shipment and covers only parts and labor, and is performed at the factory.

IESI 6000 trademark of International Entry Systems Inc.
Apple II registered trademark of Apple Corp.
IBM PC registered trademark of IBM Corp.
CP/M registered trademark of Digital Research
Z-80B registered trademark of Zilog Inc.
Wordstar registered trademark of Micropro.
Copyright 1983 International Entry Systems, Inc.
Printed in USA

IESI 6000 is manufactured by International Entry Systems Inc., 408 N.E. 72nd St., Seattle, WA 98115. Phone 206/525-6800 or call toll free 800/426-7740.

The data entry people. IESI

UNIQUE SELLING FEATURES OF THE IESI 6000 FOR SERVICE BUREAUS

BIG CAPACITY FOR DOING REAL JOBS

-FAST Z80B PROCESSOR WITH 128K RAM STANDARD
-RAMDISC FOR FAST FILE SEARCH AND OVERLAY OPERATION
-640K BYTES ON TWO MINIFLOPPY DRIVES WITH EXPANSION TO 1.2 MEGABYTES
-FULL I/O BUFFERING TO REALLY MAKE IT FAST

MARKET SIZZLE OF PROVEN CP/M PROGRAMS LIKE WORDSTAR AND SUPERCALC

-WORDSTAR AND SUPERCALC SELL EQUIPMENT ALL BY THEMSELVES
-THOUSANDS OF OTHER APPLICATION PROGRAMS FOR YOU TO SUPPLY
-CP/M IS MOST WIDELY SUPPORTED OPERATING SYSTEM

QUICK INPUT TO YOUR CURRENT APPLICATIONS, JUST LIKE BEFORE

-CP/M QUICK EASY TO IMPLEMENT, EASY TO TRAIN OPERATOR FOR, EASY TO USE
-INDEXED FILE RETRIEVAL FOR FAST OPERATION
-IDEAL FOR INVOICE GENERATION

COMMUNICATIONS JUST LIKE YOU CURRENTLY USE

-NO COMMUNICATIONS INSTALLATION CYCLE, YOU ALREADY HAVE IT
-COMMUNICATES WITH DATACORDERS, MAINFRAMES OR TIMESHARE SYSTEMS
-YOU HAVE NO SURPRISES OR MYSTERIES

COMPETITIVE FEATURES WITH ANYTHING BEING SOLD AT THE RETAIL STORES

-PRICED TO BE COMPETITIVE WITH SERIOUS DESKTOP COMPUTERS
-ALL THE FEATURES INCLUDED

GROWTH PATH COMMITTMENT FOR FUTURE EXPANSION TO WINCHESTER AND LOCAL NETWORKS

-IESI NOW COMMITTED TO KEEPING CURRENT WITH THE MARKET
-WINCHESTER IS THE NEXT DEVELOPMENT, FOLLOWED BY LOCAL NETWORKING

DESIGNED TO MAKE USE OF ANY CRTS AND/OR PRINTERS YOU CURRENTLY SUPPLY

-YOU CAN SUPPLY YOUR OWN CRT'S AND PRINTERS FOR THE 6000
-YOUR CUSTOMER BENEFITS BY NOT PAYING TWO MARKUPS
-YOU GET THE SCREEN ATTRIBUTES YOU NEED FOR YOUR SYSTEMS

IESI PROVEN SERVICE BUREAU SUPPORT

-EXPERIENCED DOING BUSINESS WITH SERVICE BUREAUS FOR SIX YEARS
-KNOWLEDGEABLE SYSTEMS SUPPORT PEOPLE TO WORK WITH YOU DIRECTLY
-FASTLINE (800-426-7740) SUPPORT FOR USER QUESTIONS
-PROBLEM SOLVING ATTITUDE WITH YOUR CUSTOMER'S SATISFACTION UPPERMOST
-HISTORY OF SUCCESSFUL SERVICE SOLUTIONS IN OUT OF THE WAY PLACES

IESI International Entry Systems Inc.
408 N.E. 72nd Street
Seattle, WA 98115
(206) 525-6800

Should a Service Bureau really be in the Data Entry business?

That's the question Keith Matula of Odin Data Systems* asked himself three years ago. With 25 in-house data entry operators, Keith had his share of problems. Absenteeism, turnover, errors, and all the standard personnel management problems (why are we telling you?).

Odin now has over 100 DATACORDERS installed in their customers' offices in a 3 state area. Editing and balancing is performed by the DATACORDER, under program control, as each customer keys their own data, with a printed audit-trail that is retained for future reference. Odin second-shift personnel calls each customer (on a cycled schedule), between Six P.M. and Midnight. The DATACORDER transmits data (unattended), over the phone line, to a magnetic tape receiver at Odin, which becomes input to the CPU the same night. Reports are distributed the next morning.

Today Odin has no data entry operators. Volume has quadrupled. Profits have increased substantially. But according to Keith, the best part of all is "peace of mind". No more edit runs and re-runs. They now spend their time building better systems rather than correcting errors, controlling schedules and balancing input.

In Keith's words, "Administratively, we just couldn't do the volume we're doing today if we had to do the data entry; I'd be in the nut-house. They'd have to come and take me away".

Keith enjoys the service bureau business a whole lot more since DATACORDER. If you have data entry problems, we can brighten your life, too! Give us a try!

800-426-7740 toll free.

* Odin Data Systems is a large service bureau in San Francisco employing 30 people. They specialize in temporary employment payroll and billing, order entry and inventory control, and general accounting applications.

The DATACORDER® Family

DATACORDER I

DATA ENTRY PLUS

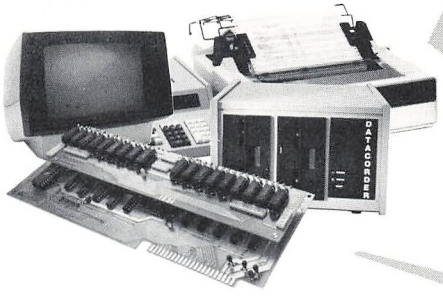
RJE COMMUNICATIONS
ON LINE FILE INQUIRY
DESK TOP COMPUTING
USING CP/M®
STORE AND FORWARD
WORD PROCESSING
FINANCIAL MODELLING

DATACORDER II

DATACORDER III

DATACORDER IV

UPGRADES AND OPTIONS



DATACORDER V

Datacorder registered trademark of IESI
CP/M registered trademark of Digital Research, Inc.

Distributed by:

Datacorder is manufactured and distributed by
International Entry Systems Inc., 408 N.E. 72nd St.,
Seattle, WA 98115. Phone
206/525-6800 or call
toll free 1-800-426-7740.

The data entry people. IESI

Check The Benefits You Want Most In a User Programmable Data Entry System

Lower Data Processing Costs
With Datacorder I there's no need for costly rekeying of data due to errors. Through the use of IESI's data entry QUICK* software, the Datacorder I formats and pre-edits the data so that it can be processed directly by the host computer from the 100,000 character tape media in the Datacorder I itself.

Friendly Operation
Datacorder I has a standard typewriter keyboard with imbedded ten key pad. Only one or two hours should be required for a person with no data processing training to learn how to operate the system. You can begin using your system the day you receive it. The Datacorder I prompts the operator each step of the way and sounds a warning to prevent mistakes. All entries can be verified instantly on the easy to read 16 character visual display and built-in 80 character per line printer.

Portability
Light weight and self-contained, the Datacorder I goes with you to conduct field audits, take inventory, process daily orders . . . you name it. There's even a power inverter available for use in a car.

Quality And Reliability
IESI Datacorder systems are noted for quality and reliability in both the data they produce and in the systems themselves. The data which is output automatically contains few errors because data is entered directly from source documents by people who understand it and there's no intermediate keypunching step.

All IESI systems have extremely high reliability inherent to their design and come with a complete service and parts warranty.

Flexibility Through Versatile Communications
The family of Datacorders are the most flexible data entry systems available today. They are compatible with virtually all major computer communications protocols for both synchronous and asynchronous transmission. Datacorder I can have either a built-in direct connect modem or an acoustic coupler. Once your data has been entered and you're ready to transmit to your home office or service bureau computer, simply access the computer via auto-dialed phone lines, press a key and the data is transmitted at up to 1200 baud. Your computer printouts will be ready in the time it takes the computer to process the data and print it.

The data entry people. IESI

SPECIFICATIONS

Central Processor:
8-bit parallel Z80 microprocessor; 158 instructions; 18 internal 8-bit registers; 1.6 microsecond instruction execution; interrupts.

Memory:
1K bytes of prom memory for machine startup sequence; 16K bytes of random access memory (RAM) for program execution (expandable to 32K).

Keyboard:
Teletype style keyboard with imbedded 10 key pad and control keys. Standard QWERTY layout, with Esc, Cntl, Line Feed, Special Branch, Back Out, Clear Entry, End, Total, and Mode keys. N-key rollover. Electronically encoded. Fully buffered in program memory. Auto repeat with extended key depression.

Mass Storage:
Mini-cassette recorder; maximum 1000 BPI density; phase encoded recording technique; transfer rate at 4800 Baud; 6 IPS tape speed at BOT; press open/close door release; rewind time 45 seconds; double buffered; capacity 100,000 characters (both sides); EOT/BOT hole sensor; read after write tape handling; 1.2 inch minimum IRG; reel to reel drive (no capstans); 8 bits per character; 245 data characters per recorded block; tape length 80'.

Printer:
Full alphanumeric; 80 character/line; electrostatic discharge; 4 3/4" wide; 5x7 dot matrix; 5 line/inch; 137 ft. roll aluminized coated paper; 180 lines/minute printing speed; field changeable head; multiple paper sources.

Display:
16 character; electronic; one line; 14 segments plus period; under program control.

Alarm:
Mild beeper provides audio feedback for each data entry keystroke and alerts operator to critical steps or rejected entries; under program control.

I/O Plug:
Full standard RS-232 interface port; driven by universal asynchronous/synchronous receiver/transmitter; programmable baud rate generator with synchronous rates to 2400 baud and asynchronous rates to 9600 baud.

Internal Modem Or Acoustic Coupler:
300 or 1200 baud internal modem with acoustic coupler; 300 baud full duplex originate or answer under program control; Bell 103 compatible; synchronous clock recovery; adjustable to European handsets.

Integral Cover/Carrying Case:
Formed plastic case with detachable dust cover with carrying handle.

Power:
115/230VAC (-15% to +10%); 50/60 cycle (+/- 2%); 3 wire grounded.

Environmental:
Operating — 50°-110°F ambient with 10%-90% relative humidity (noncondensing).
Storage — 0°-140°F ambient with 10%-95% relative humidity (noncondensing).

Size:
17 1/8" W x 18 1/8" D x 5 1/2" H.

Weight:
21 pounds.

Service And Support:
Over 2000 Datacorder devices are installed in North America, Europe and the United Kingdom. The average is less than once per year (.85 actual). Service is performed in one of four modes depending on location and user preference: 1) Return of major module to depot; 2) User replacement of faulty submodule on site with direction from IESI service personnel; 3) On site maintenance; 4) Express 24 hour service with loaner provided while user's unit is at depot. Contract billing is available. Incoming WATS lines allow central dispatching for all service and support. Special OEM arrangements are available.
Warranty is 90 days from date of shipment and covers parts and labor for factory repair.

Datacorder is manufactured and distributed by International Entry Systems Inc., 408 N.E. 72nd St., Seattle, WA 98115. Phone 206/525-6800 or call toll free 1-800-426-7740.

The data entry people. IESI

DATACORDER registered trademark of IESI.
CP/M registered trademark of Digital Research
Z-80 registered trademark of Zilog, Inc.

Datacorder II Solves Remote Data Entry Problems

Error Free Accuracy is achieved through extensive implementation of input error checking via lookup and range tables, check digit routines, selected rekeying and comprehensive operator prompts while using our QUICK* data entry software with the **Datacorder II.** One large midwestern accounting services firm, with over 250,000 transactions monthly, reports less than 1/10 of one percent input error rate.

Ease Of Use will be realized by both the operator and the programmer. **Datacorder II** was designed and built to be operated by staff accounting or secretarial personnel with no formal computer or data processing training. The friendly typewriter keyboard is supplemented by a standard "ten key" pad and a separate pad for other control functions.

Integrated Hard Copy is provided by an 80 column printer for fast review of data input. The printer is also very handy for listing programs or data tapes and permanent file storage.

Transmission Of Data via phone lines is accomplished with our completely configurable communications software and a modem. Simply dial (or allow the **Datacorder** to Autodial) the computer center, establish contact, then press two keys on the **Datacorder II.** IESI communication software is fully compatible with most major computer protocols including IBM, Burroughs, Honeywell, Univac, NCR, Mohawk, Qantel, Mitron, Inforex, Basic IV, DEC, Datapoint, Sycor, Microdata, Varian and TTY.

Your Choice Of Displays may be selected at the time of order. A large 40 character prompt/entry display is standard on the **Datacorder II.** If a full sized CRT video display suits you better, ask for our **Datacorder III.**

Forget Installation And Training Problems. The **Datacorder II** is ready for operation when it is connected to a standard three-wire grounded electrical outlet. Your machine arrives complete with a User's Manual, comprehensive Operator Training Program, Utility Programs and blank cassette tape. Experience indicates that it requires about two or three hours of practice — using the Operator Training Program — to learn to use the **Datacorder II.**

Factory Support is available to **Datacorder** users by contacting our Customer Applications Support or Service Departments on the toll free 800 phone number.

The data entry people. IESI

SPECIFICATIONS

Central Processor:
8-bit parallel microprocessor; 158 instructions; 18 internal 8-bit registers; 1-6 microsecond instruction execution speed; interrupts.

Memory:
2K bytes of PROM memory for machine startup sequence; 32K bytes of RAM memory for program execution, expandable to 64K.

Keyboard:
Teletype style keyboard with calculator pad and control keys. Standard QWERTY layout, with Esc, Cntl, Shift, Lock, Enter, Space, Line Feed, Rept and Skip on the typewriter section; Backspace, clear entry, clear Rec, digits 0 through 9 on the calculator pad; +/Entry, minus (-), =, SB, Mode, MS, Mr, X, divide, Print, Calc, EOT, ST, T on the control key pad. N-key rollover. Fully buffered in program memory. Electronically encoded.

Tape Drive Unit:
Phillips-type cassette drive; EDMA/ANSI compatible; 800 BPI, phase encoded recording technique; read-while-write recording head; EOT/BOT hole sensor; reel to reel drive (no capstans); push to open/push to close cassette door; 10 IPS tape speed; 1.2" IRG; certified computer grade digital cassett, 300 ft.; less than one bit error per 1x10(8) bits reading throughout tape; 48 second maximum rewind time. Double buffered. Capacity can be as high as 430,000 characters (2 tracks).

Printer:
Full alphanumeric; uses 137 ft. roll aluminized coated paper; 80 characters/line; 5 lines/inch; 180 lines/minute print speed; electrostatic discharge; field changeable head.

Display:
40 characters; electronic; one line; 5x7 dot matrix characters; under program control. Optional 80 character, 24 line CRT available.

Alarm:
Mild beeper provides audio feedback for each data entry keystroke, and alerts operator to critical steps or rejected entries; under program control.

I/O Port:
Standard: Full standard RS-232 interface including supervisory channel signals; driven by universal asynchronous/synchronous receiver/transmitter; two programmable baud rate generators; synchronous clock recovery circuitry; baud rates to 19,200 baud.
Optional:
Parallel Printer Interface: Parallel interface capable of interfacing to any of the Centronics family of printers, or equivalent.
Asynchronous Serial Interface (RS-232): For connection to serial peripheral devices requiring data and minimal control signals.

Physical:
Size: 6 1/4" H x 21" W x 17" D
Weight: 26 lbs.
Power: 115/230 VAC (+10%-15%); 50/60 Hz (+/-2%); Three wire grounded.

Environmental:
Operating — 50° to 110°F ambient; 10% to 90% relative humidity (noncondensing).
Storage — 0° to 140°F ambient; 10% to 95% relative humidity (noncondensing).

Service And Support:
Over 2000 Datacorder devices are installed in North America, Europe and the United Kingdom. The average is less than once per year (.85 actual). Service is performed in one of four modes depending on location and user preference: 1) Return of major module to depot; 2) User replacement of faulty submodule on site with direction from IESI service personnel; 3) On site maintenance; 4) Express 24 hour service with loaner provided while user's unit is at depot. Contract billing is available. Incoming WATS lines allow central dispatching for all service and support. Special OEM arrangements are available. Warranty is 90 days from date of shipment and covers parts and labor for factory repair.

Datacorder is manufactured and distributed by International Entry Systems Inc., 408 N.E. 72nd St., Seattle, WA 98115. Phone 206/525-6800 or call toll free 1-800-426-7740.

The data entry people. IESI

DATACORDER registered trademark of IESI.
CP/M registered trademark of Digital Research
Z-80 registered trademark of Zilog, Inc

DATACORDER III SPECIFICATIONS

Hardware:

CPU:	Z80
RAM:	32K
PROM:	2K
PRINTER:	80 ch. line electrosensitive
DISPLAY:	24 line by 80 ch/line
STORAGE:	400K ECMA/ANSI Cassette
KEYBOARD:	91 keys: 10 key, QWERTY, function keys
COMMUNICATIONS:	Full RS232 Serial Plug
PHYSICAL:	CPU: 6¼″ H x 21″ W x 17″ D 26 lbs; 115V/230V (+10%–15%); 60/50 cycle; 3 wire grounded; 50°F-100°F; 10%-90% non-condensing humidity SCREENS: 12⅜″ H x 14″ W x 14½″ D, 20 lbs.
OPTIONS:	64K RAM memory Serial I/O peripheral port, Parallel output printer port (Centronics compatible) Direct connect 202S modem (in place of standard RS232 plug)

Software

EXTENDED BASIC:
Microsoft with printer formatting, double precision (15 digit), peripheral device support.

QUICK
User friendly, with prompts and error controls needed for accurate data input. Input is tailored to the source document; output is tailored to the host CPU. QUICK gives full program control of input editing; printing, display and record output formatting. Editing includes length, data type, check digit, lookup and range table. Twenty 15-digit arithmetic registers are available. A full prompting editor makes programming easy.

BISYNCHRONOUS PROTOCOL
Fully configurable; half/full duplex; primary/secondary; terminal ID; EBCDIC/ASCII datalink/data; record deletion; transmit/receive blocksize; external/internal synchronous data clock; baud rate; space compression (3780); transparency; record delimiters; conversational mode; bid/response sequence. Diagnostic information includes full hex dump to printer of two way communication and modem status. Normal operator messages include number of blocks transmitted and number of retries required, and any abnormal termination information.

ASYNCHRONOUS TTY AND CRT TERMINAL EMULATOR
Fully configurable; EBCDIC to ASCII conversion; half/full duplex; baud rate; alternate baud rate; number data bits/character; parity; stop bits; end of line characters; character and end of line delays; compress spaces; strip nulls; null, backspace and cancel codes; character translation and replacement; upper/lower case; LRC transmission; retransmission prompting; external printer control; serial I/O port control; operator controlled options by using function keys, or remote control from host; ESC sequence cursor addressing.

BURROUGHS TD 700/800 POLLED PROTOCOL
Fully configurable; point to point/multipoint; slave/master; select wait; end of job message; full/half duplex; primary/secondary station; terminal ID/handshake ID; transmission numbers; IESI/foreign data destination/source; record delimiters; print tape parameters; diagnostics and console messages similar to BISYNC.

UTILITIES AND DIAGNOSTICS
Each unit is shipped with a Utility program to allow display of recorded data and exercising of the cassette media. An RJE Print Configurator allows received print file to be dumped to an external printer with IBM 3780 type printer control. Diagnostic programs test memory, internal device functions, and communications.

DOCUMENTATION
QUICK MANUAL AND PROGRAMMING FORMS
EXTENDED BASIC MANUAL
DATACORDER III USERS MANUAL
BISYNC COMMUNICATION MANUAL
BURROUGHS COMMUNICATION MANUAL
TTY COMMUNICATIONS MANUAL

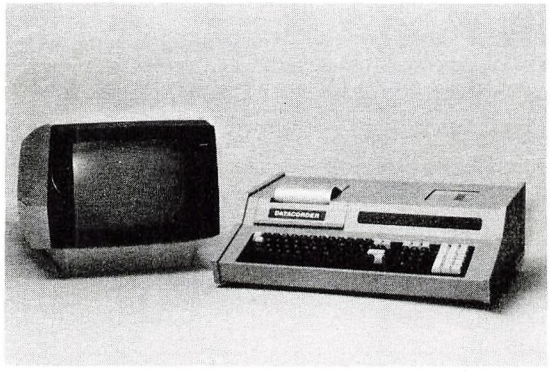
Service and Support:

Over 1700 Datacorder devices are installed in North America and Europe. The average failure rate is less than once per year (.85 actual). Service is performed in one of four modes depending on location and user preference: 1) Return of major module to depot; 3) User replacement of faulty sub-module on site with direction from service manager; 3) On site maintenance; 4) Express 24-hour service with loaner provided while user's unit is at depot. Contract billing is available. Incoming WATS lines allow central dispatching for all service and support. Special OEM arrangements are available. Warranty is 90 days from date of shipment and covers parts and labor for factory repair.

Distributed by:

Datacorder is manufactured and distributed by International Entry Systems Inc., 408 N.E. 72nd St., Seattle, WA 98115. Phone 206/525-6800 or call toll free 1-800-426-7740.

The data entry people. **IESI**



Datacorder® III

programmable

Z-80 Communications Terminal

for:

- **Stand alone data entry with RJE communications**
- **On-line file inquiry**
- **Desk top computer**
- **Store & forward communications controller**

Description:

Datacorder III is a microprocessor-based user programmable data entry and file inquiry terminal. The major applications are 1) Stand alone data entry with RJE Communications; 2) On-line file inquiry; 3) Stand alone processing, and 4) Store and forward communications controller.

Stand Alone Data Entry with RJE Communications:

Datacorder III uses QUICK, a powerful data entry language, to provide operator prompted keyboard data entry. Keyed responses are formatted into internally printed and/or displayed lines. Information can be routed to an external printer for source document generation. Formatted lines are recorded to casette. Errors recorded on cassette can be recalled and corrected under program control.

After the data is recorded, an RJE communications program provides either attended or unattended communications. Status printed out on the internal printer allows positive confirmation of transmissions. Imbedded diagnostics allow for tracking of transmission problems.

On-Line File Inquiry:

The availability of full CRT with terminal emulation software allows Datacorder III to be used as an on-line terminal for input and file inquiry purposes. Configurable terminal emulation allows connection to HP, DEC, DG, time sharing networks, and other asynchronous systems. The cassette and printer can be remote controlled. Automatic answer allows unattended operation.

Stand Alone Processing:

Extended Basic application programs can be written that make use of the cassette storage, CRT, internal printer and external peripheral devices. Typical applications include statistical analysis, spread sheet preparation, interest and depreciation calculations, and automatic typing.

Reports based on entries previously recorded to cassette can be prepared and printed. Typically these are summaries of basic accounting entries, such as daily P & L and business closing summaries, labor and parts usage summaries, inventory and order summaries.

Store and Forward Communication Controller:

The Datacorder is used as a store and forward protocol converting device. Using the optional RS232 serial I/O port, the Datacorder polls networks of automated data collection devices, such as time clocks, hand-held order entry terminals, etc.; storing the data on cassette. As required, the sorted data is then passed to the host processor using the host's protocol.

DATACORDER V

Datacorder Stands Alone To Maximize Your Investment And Increases Your Productivity With Powerful Data Entry

The Versatile Datacorder V Microcomputer is a powerful single-user small business computer system having access to the large software library available through its CP/M 2.2 operating system including word processing, financial modelling, and general accounting applications.

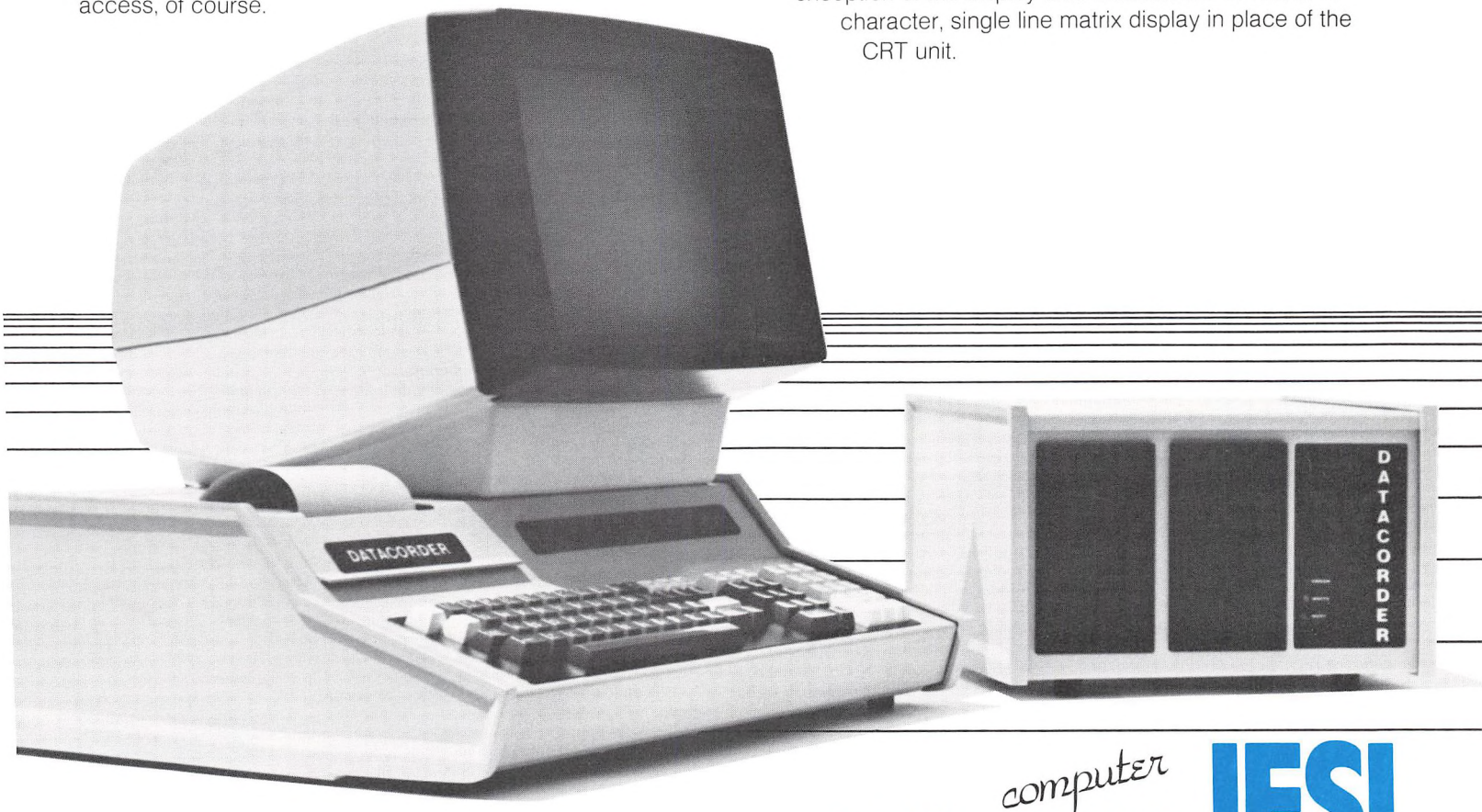
Mainframe Computer Processing is available with Datacorder V through use of its QUICK* data entry and advanced telecommunications software programs. QUICK* was developed by IESI as an extremely friendly data entry language which can reduce input errors to less than 1/10 of one percent. Configurable communications programs allow remote data transmission in virtually any common protocol; either synchronous or asynchronous.

Large Memory Storage is obtained with the dual 5 1/4" flexible disk drive unit. The Datacorder V has expansion capability of up to four drives per system with your choice of disk densities resulting in full user storage capacities of from 626,688 (612K) bytes to 2,564,096 (2.5M) bytes. Full track buffering for fast disk access, of course.

Easy On The Eyes. The Datacorder V has a large white or green phosphor 80 character by 24 line video display featuring the full ASCII character set plus six international fonts, reversing and half intensity video, and direct/relative cursor addressing.

Integrated Hard Copy for a full system log, audit trail, report printout or program listings is available at a keystroke from the integral 180 line per minute 80 character printer.

Optional Display on Datacorder IV. The Datacorder IV is identical in all respects to the Datacorder V with the exception of the display unit. Datacorder IV has a 40 character, single line matrix display in place of the CRT unit.



computer
The data entry people. IESI

SPECIFICATIONS

CPU:
2.5 MHz Z80 microprocessor with 64K main memory, 8 counter timer channels, 30 decoded I/O ports.

Keyboard:
Dedicated microprocessor controlled, 84 keys total, 56 keys main keyboard with typewriter pairing, 10 key plus decimal keypad with tactile surface on 5 key for reference without looking, calculator keypad with Plus-Minus-Times-Divide-Subtotal-Total-Etc., Repeat key, Alpha Lock key, plus 15 strategically placed control keys (Esc, Cntl, Rept, Line Feed, Back Space, Clear Entry, Clear Record, SB, Mode, Print, MS, Calc, MR, EOT), N-key rollover, two levels of keyboard buffering to keep up with the fastest operator, optimum comfort angle keyboard placement, mild audible click on keystroke for operator feedback.

Integral Printer:
4 3/4" electrosensitive, 80 character line, 180 line per minute audit trail printer, software controllable as console output device under CP/M, may be used as inexpensive log of all operations and transactions.

Display:
12" diagonal screen, 24 lines x 80 characters, 1920 character positions, 5x8 dot pattern characters in a 7x10 dot matrix, upper and lower case with lower case descenders, white on black or black on white, half intensity-blinking-reversed video-underline attributes available under program control, 96 character ASCII font standard, six international fonts are internally switch selectable; these are 1) Belgium/France/Azerty, 2) Germany/Switzerland, 3) Spain/Finland, 4) Denmark/Norway, 5) Spain, 6) Netherlands, control codes for relative cursor movement — attribute tagging — Bell - CR - LF - etc., ASCII Esc sequences used for absolute cursor positioning and attribute definition, cursor maybe block or underline — steady or blinking.

Disk Subsystem:
Separate microprocessor controlled 5 1/4" disk subsystem attaches to host Datacorder via the peripheral expansion port, accepts and executes disk commands, returns status, accepts data for writing and returns data read, over 612K characters formatted capacity standard with optional expansion to over 2.5 million characters formatted capacity, average access time under 1 second, extensive error reporting capacity of disk subsystem keeps the host software and operator aware of performance levels at all times — this allows faulty disks to be detected and replaced before loss of data occurs. Disk subsystem automaticaly does a self test each time power comes up or host system software is reloaded. Red LED indicates disk subsystem error, amber LED to indicate when system is writing on selected disk, LED on each drive to indicate when the drive is selected.

Communications Interface:
Terminal side configured ANSI standard 25 pin V.24 connector with RS-232 signals for primary and secondary channels, internal or external clock under software control, Sync - Async - Baud rate - bits per character, parity off/on/even/odd, all under software control.

Parallel Peripheral Port:
Centronics standard parallel interface port for driving printers which have centronics compatible interface.

Physical:
Console: 6 1/4" H x 21" W x 17" D, 26 lbs.
Display Unit: 12 3/8" H x 14" W x 14 1/2" D, 20 lbs.
Disk Drive Unit: 8 1/4" H x 12 1/2" W x 10 3/4" D, 20 lbs.

Power:
115/230 VAC (+10%-15%) 50/60 Hz (±2%); 3 wire grounded; 250 watts.

Environmental:
50° to 100°F; 10% to 90% relative humidity (noncondensing).

Options:

Auxiliary Serial Port:
Modem side configured ANSI standard 25 pin v.24 connector and signals for primary and control ions for baud rate — parity on/off/even/odd — bits per character, etc.

Internal Modem:
Standard RS-232 connection can be replaced with a direct connect 202S compatible modem that is integral in the Datacorder. This modem is used for half duplex synchronous or asynchronous communication.

Service And Support:
Over 2000 Datacorder devices are installed in North America, Europe and the United Kingdom. The average is less than once per year (.85 actual). Service is performed in one of four modes depending on location and user preference: 1) Return of major module to depot; 2) User replacement of faulty submodule on site with direction from IESI service personnel; 3) On site maintenance; 4) Express 24 hour service with loaner provided while user's unit is at depot. Contract billing is available. Incoming WATS lines allow central dispatching for all service and support. Special OEM arrangements are available. Warranty is 90 days from date of shipment and covers parts and labor for factory repair.

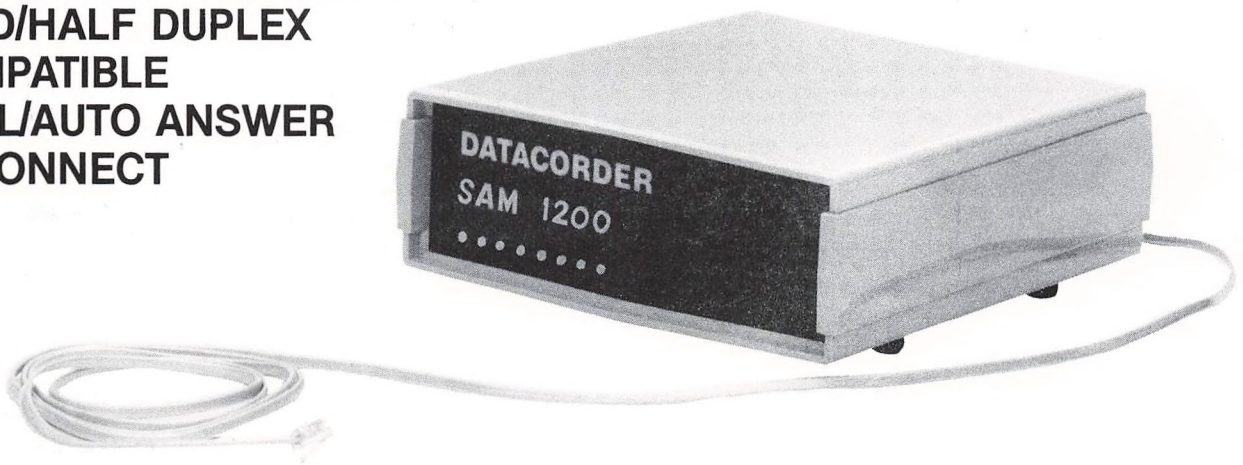
DATACORDER registered trademark of IESI.
CP/M registered trademark of Digital Research
Z-80 registered trademark of Zilog, Inc.

Datacorder is manufactured and distributed by International Entry Systems Inc., 408 N.E. 72nd St., Seattle, WA 98115. Phone 206/525-6800 or call toll free 1-800-426-7740.

The data entry people. IESI

SAM 1200 MODEM

SYNCHRONOUS OPERATION
1200 BAUD/HALF DUPLEX
202S COMPATIBLE
AUTO DIAL/AUTO ANSWER
DIRECT CONNECT



ADVANCED MICROPROCESSOR-BASED MODEM:

The SAM 1200 is an advanced microprocessor based Bell 202S compatible modem. It operates in half duplex mode at up to 1200 bps on the DDD network. The use of the microprocessor in the design allows the advanced features described below, and increased reliability through decreased component count. Fewer components greatly improves mean time between failures. The SAM 1200 utilizes a unique Data Carrier Detect circuit that is frequency sensitive as well as level sensitive. Noise, even noise above DCD threshold—will not trigger Data Carrier Detect. The user terminal sees data only when there is a true "in band" signal.

SYNCHRONOUS OR ASYNCHRONOUS OPERATION:

SAM 1200 provides a receive and transmit data clock. This means that SAM 1200 can be used for both asynchronous and synchronous communications. Prior to this, IBM BISYNC users usually used expensive 2400 baud modems because there were no 1200 baud synchronous modems available. Now SAM 1200 allows the user to fit the right speed modem to the smaller installation.

FCC APPROVED FOR DIRECT CONNECT:

The SAM 1200 contains protective circuitry in accordance with FCC Rules and Regulations part 68. This means the user can plug it in like a phone, using a standard modular phone plug. The user does not have to get any special protective devices from the phone company.

AUTO ANSWER CAPABILITY:

When given the correct interface signals, SAM 1200 will automatically answer the phone. This is useful for central computer sites that are dialed by users, and for users that are polled by the central computer.

AUTO CALLING CAPABILITY:

The SAM 1200 can actually dial the phone line making a phone set, other automatic calling units, or additional out-pulsing hardware unnecessary. If the user terminal is capable of sending telco dial pulse information, the SAM 1200 allows this dialing to be done directly. If the user terminal is capable of sending only ASCII data, then the user merely presses the "DIAL" button on the modem and keys the number on the terminal's keyboard. The modem will dial the number and then connect the terminal for transmission.

SELF TEST MODES:

The modem has two self test modes to insure that minimum effort is required to isolate the causes of any difficulties which may arise. These are activated by switches on the rear of the unit.

MODE I causes the modem to send the mark frequency for 1 second, then the space frequency for 1 second, then back to the mark and so on until the switch is placed back into the normal position.

MODE 2 causes the data sent to the modem to be sent through the transmitter to the receiver. The receiver then sends the data back to the terminal or host for verification.

STATUS INDICATORS:

The front panel of the modem has eight LED indicators to show the state of the following signals:

DTR	RTS	TXD	RLSD
DSR	CTS	RXD	POWER

DATACORDER registered trademark of IESI.

SAM 1200 SPECIFICATION

DATA TERMINAL INTERFACE:

EIA RS232C interface consistent with CCITT V.24. The following signals are used:

Direction Pin #	Signal	– V*	+ V*
2	Transmitted Data	Mark	Space
3	Received Data	Mark	Space
4	Request to Send	False	True
5	Clear to Send	False	True
6	Data Set Ready	False	True
7	Signal Ground		
8	Receive Line Signal Detect (Carrier Detect)	False	True
14	Dial Pulse Enable	True	False
15	Transmit Clock		
17	Receive Clock		
20	Data Terminal Ready	False	True
22	Ring Indicator	False	True

* + V = + 3V to + 15V * – V = – 3V to – 15V

Receive clock transitions from + V to – V in the middle of each data bit. Transmit clock transitions from – V to + V when data should be shifted to the next bit.

AUTO ANSWER FEATURE:

If the modem is set in "Data Mode," connected to the phone line and terminal ready is held true or brought true when a phone call comes in, the modem will answer the ring, place ABT (answer back tone) on the line and then raise data set ready to true (+ V). The terminal will then be able to communicate with the calling party.

PULSE THROUGH DIAL FEATURE:

To pulse through dial, the terminal must be capable of sending telco dial pulse information over the transmitted data line. Pin 14 of the interface connector is brought to – V and a 10 second delay is initiated, then transmitted data is pulsed + V 60ms, – V 40ms for the count of the dialed digit. A delay of 600ms is allowed before the beginning on the next digit. When all digits have been dialed, pin 14 in return to + V.

AUTOMATIC DIAL OPTION:

When the automatic dial option is installed, the modem will accept async (ASCII) characters as digits to be dialed. Upon receipt of the EON (end-of-number) character (ASCII "L"), the modem will pulse dial the phone number. The number may contain a delay character (ASCII "M") to cause a 2 second delay when necessary as after dialing a 9 for an outside line. The maximum number of digits, including delay and EON characters, is 16.

To access automatic dial through the data equipment, the user must ensure that DSR is off and raise DTR and RTS. When CTS is received, the async ASCII digits may be transmitted at 1200 baud. After the last number digit and EON character are transmitted, the modem will dial the number and then return DSR while the distant phone is ringing. If communications are not established, it is up to the user to drop DTR to abort the call.

To manually access automatic dial when using a dumb CRT or similar device, press the "DIAL" button on the modem, wait for CTS light to come on and then type the phone number, including the delay character ("M"), as necessary and end the number with EON ("L"). Press the Data Mode button. When the DSR light comes on, the phone number has been dialed. Some delay may be required before the system on the call receiving end is ready for data. To abort, press the "HANG UP" button for 2 seconds, then release it.

To stand ready for auto answer, press the "DATA MODE" button. RTS from data equipment must be low while waiting for an auto answer.

PHYSICAL CHARACTERISTICS:

Size: 8.5" wide, 3.7" high, 9.2" deep (not including cable and cable connectors).
Weight: 2.5 lbs. max not including wall plug power transformer.

COMPATIBILITY:

1200 baud, frequency shift keyed, half-duplex, BELL 202S compatible.

TRANSMIT FREQUENCIES:

Mark 1300 HZ ± 1.5%
Space 2100 HZ ± 1.5%
Carrier 1700 HZ ± 1%

RECEIVE FREQUENCIES:

Mark 1200 - 1300 HZ
Space 2100 - 2200 HZ

ANSWER BACK TONE:

2025 HZ for 2.5 sec. ± 5%

SOFT CARRIER TURN OFF:

900 HZ for 25ms ± 5%

CLEAR TO SEND DELAY:

180 MS ± 5%

DATA CARRIER DETECT RESPONSE:

25 ± 5 MS Operate Time
15 ± 5 MS Release Time
@ – 46 ± 3 dbm minimum

TRANSMIT LEVEL:

Permissive, – 9 dbm Max

RECEIVE LEVEL:

– 10 dbm to Data Carrier Detect Threshold

STATISTICAL ERROR DATE:

Less than 1 in 10^5 bits at a signal to noise ratio of 15 db measured with a true RMS voltmeter when operating on a simulated worst case line (SEG Electronics Model FA-1445) with white noise 3K HZ wide added at the output of the simulator.

RECEIVER SQUELCH:

Following RTS off - 35 ± 20 MS including data carrier detect delay.

POWER:

117 VAC ± 10%, 45-65 HZ, 56 MA, 6.5 watts via wall plug power transformer

HEAT EFFECT:

Approximately 25 BTU/Hour

ENVIRONMENT:

Operating Temperature Range: – 10° C to + 60° C
– 14° F to + 140° F
Relative Humidity: 0 to 95% non-condensing
Storage Temperature Range: – 25° C to + 70° C
– 13° F to + 158° F

DATA EQUIPMENT INTERFACE CONNECTOR:

Industry standard DB25S provided
Mating Connector: DB25P

TELEPHONE LINE INTERFACE:

In accordance with FCC Rules and Regulations Part 68
FCC Registration #: ABV954-69275-DM-R
Ringer Equivalence: 0.7B

TELEPHONE COMPANY ORDERING INFORMATION:

When ordering a plug connection from the phone company, use the following instructions: 1) Give the phone company the FCC Registration Number ABV954-69275-DM-R, Ringer Equivalence: 0.7B; 2) If voice communication is not required, then order a USOC RJ11C; 3) If voice communication is required, then order the following items: USOC RJ16X, USOC RJ36X, and a USOC 503 telephone set. The telephone set is ordered with the following options: A2 (dataset controls line), B4 (Oral Monitoring Provided), D8 (Voice Mode Indication), and *either* C5 if touch tone, or C6 if rotary dial.

Distributed by:

SAM 1200 is manufactured and distributed by International Entry Systems Inc., 408 N.E. 72nd St., Seattle, WA 98115. Phone 206/525-6800 or call toll free 1-800-426-7740.

The data entry people. IESI